

Attorney Docket No.: 0180144

In the Claims:**RECEIVED
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Claim 1 (currently amended): A FET situated over a substrate, said FET comprising:

a channel situated in said substrate;

a first gate dielectric situated over said channel, said first gate dielectric having a first coefficient of thermal expansion;

a first gate electrode situated over said first gate dielectric, said first gate electrode having a second coefficient of thermal expansion;

wherein said first gate dielectric is selected to have said first coefficient of thermal expansion and said first gate electrode is selected such that a difference between to have said second coefficient of thermal expansion and said first coefficient of thermal expansion causes an so as to cause a strain in said channel, thereby increasing increase in carrier mobility in said FET.

Claim 2 (original): The FET of claim 1 wherein said second coefficient of thermal expansion is greater than said first coefficient of thermal expansion.

Claim 3 (original): The FET of claim 2 wherein said increase in said carrier mobility is caused by a tensile strain created in said channel.

Claims 4-5 (canceled)

Claim 6 (original): The FET of claim 1 wherein said FET is a PFET.

Claim 7 (original): The FET of claim 6 wherein said first coefficient of thermal expansion is greater than said second coefficient of thermal expansion so as to cause a compressive strain in said channel, said compressive strain causing said increase in said carrier mobility.

Claim 8 (canceled)

Claim 9 (currently amended): A FET situated over a substrate, said FET comprising a channel situated in said substrate, a first gate dielectric situated over said channel, said first gate dielectric having a first coefficient of thermal expansion, a first gate electrode situated over said first gate dielectric, said first gate electrode having a second coefficient of thermal expansion, said FET being characterized in that:

 said first gate dielectric being selected to have said first coefficient of thermal expansion and said first gate electrode are being selected such that a difference between to have said second coefficient of thermal expansion and said first coefficient of thermal expansion causes an so as to cause a strain in said channel, thereby increasing increase in carrier mobility in said FET.

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Claim 10 (original): The FET of claim 9 wherein said second coefficient of thermal expansion is greater than said first coefficient of thermal expansion so as to cause a tensile strain in said channel, said tensile strain causing said increase in said carrier mobility.

Claims 11-12 (canceled)

Claim 13 (original): The FET of claim 9 wherein said FET is a PFET, said first coefficient of thermal expansion being greater than said second coefficient of thermal expansion so as to cause a compressive strain in said channel, said compressive strain causing said increase in said carrier mobility.

Claim 14 (canceled)

Claim 15 (currently amended): A FET situated on a substrate, said FET comprising:

- a channel situated in said substrate;
- a gate stack situated over said channel;
- a first gate dielectric situated in said gate stack, said first gate dielectric having a first coefficient of thermal expansion;
- a first gate electrode situated over said first gate dielectric, said first gate electrode having a second coefficient of thermal expansion;

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wherein said first gate dielectric is selected to have said first coefficient of thermal expansion and said first gate electrode is selected such that a difference between to have said second coefficient of thermal expansion and said first coefficient of thermal expansion causes so as to cause a compressive strain in said channel, thereby increasing said strain causing an increase in carrier mobility in said FET.

Claims 16-18 (canceled)

Claim 19 (currently amended): The FET of claim 15 wherein said FET is a PFET, said first coefficient of thermal expansion being greater than said second coefficient of thermal expansion so as to cause a said compressive strain in said channel, said compressive strain causing said increase in said carrier mobility.

Claim 20 (canceled)